

## REMARKS

This Response is submitted in reply to the Office Action dated July 27, 2004. Claims 1-13, 15-28 and 30-35 are pending in the patent application. Claims 14 and 29 were withdrawn. None of the claims have been amended. Claims 1, 4, 5-7, 9, 10, 12, 15, 16, 22, 24, 25, 26-28 and 30 were rejected under 35 U.S.C. § 102(e). Claims 2, 3, 8, 11, 17-21, 23 and 31-35 were rejected under 25 U.S.C. § 103(a). Applicants respectively submit, for the reasons set forth below, that the rejections have been overcome or are improper. Accordingly, Applicants respectfully request reconsideration of the patentability of Claims 1-13, 15-28 and 30-35.

Claims 1, 4, 5-7, 9, 10, 12, 15, 16, 22, 24, 25, 26-28 and 30 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. patent No. 5,917,490 to Kuzunuki et al. ("*Kuzunuki*"). Applicants respectively disagree with the Patent Office and submit that *Kuzunuki* does not disclose all of the elements of Claims 1-13, 15-28 and 30-35.

The claimed invention is directed to an information input/output system and an information input/output method which enables users to easily and quickly transfer information from one computer to another computer, from a computer to a printer or any other transfer of information between similar devices by expanding the digital space of a computer into the real world. For example, an image of a computer display screen may be projected onto a wall or other surface in a room using a projector. The projected image now is part of the local space of the computer (i.e., displayed on the computer screen) and also an object in the real world such as a computer image being displayed on a table top or wall. (see the Specification, page 9, lines 4 to 10). Accordingly, a user can handle information three-dimensionally making use of the positional relationship of various objects in the real world without having to remember or pay attention to the location addresses or identification numbers for the individual objects on the computers. Accordingly, the entire room where the computer is placed can be used as part of the computer display to handle and transfer different objects such as files from the computer to physical devices or surfaces in a room such as a table top, wall or display screen. (see the Specification, page 10, lines 5 to 12).

In one example, a user can drag or move a digital object or image representing a document file which is on a computer screen or display screen to a tabletop or wall (i.e., a physical object). Therefore, the virtual space of the computer is expanded to the physical space of the tabletop, room or other area. In another example, a plurality of users seated around a table

(where each user has their own computer) can share documents and transfer documents using the common physical work space of the table or room which the users are in. (See the specification, page 55, line 18 to page 56 line 9). This enables the digital objects on a user's computer to a common physical work space and freely transferred or exchanged with another user's computer or another device such as a printer.

Conversely, *Kuzunuki* is directed to an interactive information processing system and method which enables a user to physically manipulate electronic information on a display screen such as a computer screen. (See the Abstract). Specifically, *Kuzunuki* includes a desk cabinet 100 having a horizontally installed plane display 101 and a vertically installed front display 102 that are combined together. Additionally, the system includes an overhead camera 300 and projectors 5 and 106 which transforms physical or actual objects into images (column 7, lines 30-35; Figs. 1 and 2). As shown in Figs. 6A to 6C, an image object 104 (image of a document) is manipulated by the hands 200-1 and 200-2 of a user on a display. In Fig. 6A, the user manipulates the image object 104 using one hand or left hand 200-1. In Fig. 6B, the user uses the image object 104 on plane display 101 using an image of their physical hands projected on the display to hold and move the imaged object from one position to another position. (Col. 10, lines 4-14). In Fig. 6C, the user rotates their hand 200-1 to correspondingly rotate the image object 104 of the document on the display. Moreover, as illustrated in Figs. 8A and 8B, the image object 104 may be moved by the user by holding the image object with the user's hand 200-1 and move the image object onto an image of a facsimile part 112 to fax the image object or image of the document. (Col. 10, lines 33-44). Moreover, *Kuzunuki* is directed to an information processing system which enables users to display images of physical objects on a display screen and manipulate the images of the objects on the display screen using their hands. *Kuzunuki* does not disclose, teach or suggest moving images on a display screen such as a computer screen from the computer screen to a physical object such as a tabletop or a wall of a room. *Kuzunuki* also does not disclose, teach or suggest moving the images of the objects from the computer screen onto another physical object such as a fax machine or printer. More specifically, *Kuzunuki* does not disclose, teach or suggest "a processing operation of recognizing the digital object dropped to a site on a surface of each of said physical objects" and "a processing operation of forming link information for linking the digital object to the drop site on the surface of each of said physical objects," as in Claim 1.

For at least these reasons, Claim 1, and Claims 3-5 which depend from Claim 1, are each patentability distinguished over *Kusunuki* and are in condition for allowance.

Independent claims 6, 9, 12, 15, 22, 26-28 and 30 each include certain similar elements to Claim 1. Additionally, these claims include the elements of one or more operation surfaces arranged in an information space on a display means for displaying an image on the operation surfaces. *Kusunuki* also does not disclose, teach or suggest these elements. Therefore, Claims 6, 9, 12, 15, 22, 26-28 and 30, and Claims 7-8, 10-12, 13 and 23-25 which depend from these claims, respectively, are each patentability distinguished over *Kusunuki* and are in condition for allowance.

Claims 2, 3, 8, 11, 17-21, 23 and 31-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Kusunuki* in view of “the digital desk calculator,” proceedings of ACM symposium on user interface software and technology (UIST) 11-13 November, 1991 written by Pierre Wellner (“*Wellner*”). Applicants respectively traverse this rejection for the following reasons.

Claims 2 and 3 depend from independent Claim 1. Claim 8 depends from independent Claim 6. Claim 11 depends from independent Claim 9. Claim 23 depends from independent Claim 22. Accordingly, Claims 2, 3, 8, 11 and 23 are allowable for at least the reasons set forth above with respect to independent Claims 1, 6, 9 and 22, respectively, and for the further reasons that the combination of *Kusunuki* and *Wellner* fails to disclose, teach or suggest the novel elements of Claims 2, 3, 8, 11 and 23 in combination with the novel elements of independent Claims 1, 6, 9, and 22. For these reasons, Claims 2, 3, 8, 11 and 23 are patentably distinguished over the combination of *Kusunuki* and *Wellner* and are in condition for allowance.

Regarding independent Claims 17 and 31, the Patent Office states that *Kusunuki* teaches all of the elements of these claims but does not teach that “the physical object is a portable computer capable of being moved in said information space in exchanging digital objects with other computers.” (See, the Office Action, pages 8 and 9). The Patent Office therefore attempts to remedy the deficiencies of *Kusunuki* using *Wellner*. Applicants respectfully submit that the combination of *Kusunuki* and *Wellner* does not disclose, teach or suggest the elements of Claims 17 and 31.

*Kusunuki* teaches the physical manipulation of an image of a physical object on a display such as a computer screen as described above. For example, the image of the user hands can

manipulate an image of a file to move the file to different positions on the display screen. Conversely, *Wellner* teaches a system that allows a user to interact with paper and electronic objects by physically touching them to manipulate them. As shown on page 30 of *Wellner*, a user touches and moves an electronic image from one position on a desk top to another position on a desk top where the numbers are moved to an electronic image of a calculator. (See Fig. 2 of *Wellner*). The images of the number or numbers are being moved from one electronic image to another electronic image and not from one computer display to another computer display or other device such as a printer or fax machine as in the claimed invention. Additionally, as described, *Kusunuki* does not disclose, teach or suggest a processing operation recognizing a digital object dropped onto a site on a surface of physical object and a processing operation of forming link information for linking the digital object to the drop site on the surface of the physical object. Accordingly, the combination of *Kusunuki* and *Wellner* does not disclose, teach or suggest the elements of Claims 17 and 21.


For at least these reasons, Claim 17 and Claims 18 to 21 which depend from Claim 17, and Claim 31 and Claims 32-35 which depend from Claim 31, are each patentably distinguished over the combination of *Kusunuki* and *Wellner* and are in condition for allowance.

In light of the above, Applicants respectively submit that Claims 1-13, 15-28 and 30-35 are patentable over the art of record because neither *Kusunuki* or *Wellner* when taken alone or in combination, disclose, teach or suggest all the elements of these claims. Accordingly, Applicants respectively request that Claims 1-13, 15-28 and 30-35 be deemed allowable at this time and that a timely notice of allowance be issued in this case.

No fees are due in this case. If any other fees are due in connection with this application as a whole, the Patent Office is authorized to deduct the fees from Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. (112857-251) on the account statement.

Respectfully submitted,

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